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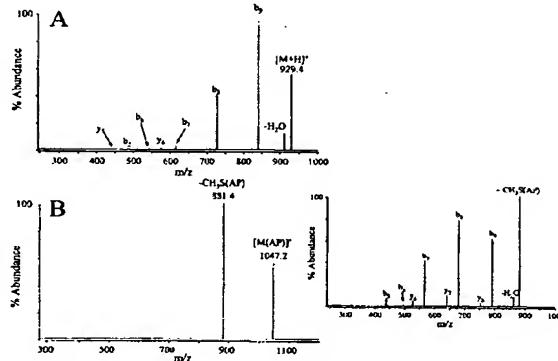
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(54) Title: METHOD FOR ANALYSING AMINO ACIDS, PEPTIDES AND PROTEINS



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(57) **Abstract:** The invention provides methods, reagents and kits for amino acid, peptide and protein identification, differential quantitation and for the analysis of post translational modification and cross-linking status, comprising: derivatizing a mixture of amino acids peptides or proteins, to form at least one amino acid peptide or protein containing a fixed-charge ion, other than at the C-terminal or N-terminal end thereof; introducing the mixture of amino acids peptides or proteins containing the fixed charge derivatized amino acid peptide or protein to a mass spectrometer; passing the mixture of amino acids peptides or proteins containing the fixed charge derivatized amino acid peptide or protein through a first mass resolving spectrometer to select precursor protein or peptide ions having a first desired mass-to-charge ratio; subjecting the precursor ions of the first mass to charge ratio to dissociation to form a product ion having a second mass-to-charge ratio that is characteristic of a fragmentation occurring at a site adjacent to the fixed charge; and detecting the product ions having the second mass-to-charge ratio. The product ion having the second mass-to-charge ratio may be either a product ion formed by *neutral* loss of the fixed charge from the precursor ion, or a product ion formed by *charged* loss of the fixed charge from the precursor ion.